Comparisons of Job Characteristics

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Programmers (15-1021)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 90

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Programmers (15-1021)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Computers and Electronics	8.4	24.2	22.8	0	Current knowledge level may be sufficient
Mathematics	9.2	13.1	18.3	>>	Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 69

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Programmers (15-1021)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Programming	2.2	17.3	12.4	<<	Extensive development of skills in this area may be required
Quality Control Analysis	5.9	11.6	4.2	<<	Extensive development of skills in this area may be required
Operations Analysis	5.0	10.1	10.6	0	Current skill level may be sufficient
Systems Evaluation	6.4	10.1	14.7	>>	Skill level is likely more than sufficient
Technology Design	2.6	6.2	10.0	>>	Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 96

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Programmers (15-1021)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Written Comprehension	11.0	13.8	13.1	0	Current ability level may be sufficient
Information Ordering	9.9	12.8	12.6	0	Current ability level may be sufficient
Deductive Reasoning	10.6	12.2	14.6	>	Current ability level is likely sufficient
Inductive Reasoning	10.2	11.6	14.1	>	Current ability level is likely sufficient
Mathematical Reasoning	6.3	10.2	10.8	0	Current ability level may be sufficient
Number Facility	6.3	9.6	9.8	0	Current ability level may be sufficient
Perceptual Speed	7.4	8.7	8.2	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 95

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Programmers (15-1021)

Work Activities	Exclusivity of Activity
Communicate technical information	4
Consult with managerial or supervisory personnel	60
Design computer hardware or software interface	87
Design computer programs or programming tools	92
Develop mathematical or computer languages	89
Develop or maintain databases	30
Develop tables depicting data	33
Direct and coordinate activities of workers or staff	3
Follow data security procedures	77
Follow data storage procedures	75
Prepare technical reports or related documentation	22
Program computers for electronic engineering applications	87
Program computers using existing software	85
Program mainframe computer	84
Provide technical computer training	82
Resolve symbolic formulations in data processing applications	89
Test computer programs or systems	78
Use computer application flow charts	84
Use computer programming language	82
Use computers to enter, access or retrieve data	3
Use differential equations in computer programming	95
Use geographical information system (GIS) software	72
Use interpersonal communication techniques	10
Use knowledge of mainframe computers	78

Use object-oriented computer programming techniques	85
Use project management techniques	47
Use relational database software	26
Use spreadsheet software	18
Use structural analysis techniques to analyze computer systems	89
Use word processing or desktop publishing software	17
Write computer software, programs, or code	84
Write documentation for computer programming	87

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 81

Focus Occupation: Computer and Information Scientists, Research (15-1011)
Associated Occupation: Computer Programmers (15-1021)

Tools and Technologies	Exclusivity
Computers	1
Content authoring and editing software	1
Data management and query software	1
Development software	4
Industry specific software	1
Operating environment software	12
System Cards	51

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.